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NATIONAL REPROACHES ABOUT UNFORTUNATE MEN OF GENIUS.

It seems to be considered quite right and proper that the premature death of a man of poetical genius under the pressure of misfortune, should be laid to the charge of his country, as if the nation had been under a recognised moral obligation to nourish and support him. Thus Scotland is blamed for the fate of Burns; and thus England may in like manner be reproached for the tragic history of her Otway and her Chatterton, or for the more recent neglect experienced by Robert Bloomfield. We have long been convinced that there is some fallacy lurking here, and our opinion is confirmed by certain circumstances of comparatively recent occurrence.

It is certainly very striking that, in the cases of fortunate authors, the public at large is never seen to have been the source of the good fortune. Several poets, as Pope, Scott, Byron, have indeed realised considerable sums by the sale of their poems; but there an equivalent was given in the books. In some other instances, poets have had places and pensions; but there it was political interest which operated, and the fortunate son of the Muses was in no way distinguished from the herd of common men who live upon the public money with or without equivalents of service. What we mean is, that there is no case of the public coming forward and saying, 'You are a man of genius—we think you ought to be supported, and here is a living for you, that you may sing in ease and tranquillity.' In short, if literary men have ever enjoyed a subsistence equal to other men, it has not been from anything like a direct extension to them of public beneficence. The public, as a public, never makes the least interference in their behalf.

But, it will be said, 'The public does not need to interfere in the case of a man who enjoys a good living otherwise. It is only where there is a want, that it is called upon to come forward with its purse. And how often has it made subscriptions to succour both men of genius and their children, and other connexions?' Here, we say on the contrary, the public, as a public, does nothing. In all such cases, the beneficence comes from a limited number of individuals, whom it were almost as absurd to call the public, as it was to give the name of the People of England to the three tailors of Tooley Street. It is said, for instance, the public has placed the sister of Burns in comfort. But the rigid fact is, that this was done by about two hundred persons, being about the one hundred and thirty-thousandth part of the whole public—and these, as we happen to know well, were not in general the persons who might have been expected to contribute to such a fund: of the whole literary class in Edinburgh, for example, not one gave

a shilling, or even answered the letters addressed to them on the subject. So also 'the public' has subscribed two thousand pounds to relieve the family of Mr Loudon from debt; the actual subscribers being probably not more in number than in the preceding instance.* John Clare, the most brilliant genius produced amongst the English peasantry, is supported by 'the public' in a lunatic asylum: for 'public' read 'two or three persons.' The English, as a public, have been utterly neglectful of this extraordinary man. Coleridge, Lamb, Hazlitt, were all of them unwedowed men of genius living in our own age, and what did the public do for them? It allowed the first to live in sole dependence upon a private gentleman, the second to drudge at a desk till he became entitled to a small pension from his employers, and the fourth to write the daily sheet for the daily subsistence, till he sunk into a premature grave. And when something is done for men of genius or their connexions, it is equally found that the merit of calling for, collecting, and bestowing it, is due to one or two individuals. The public allows the most piteous cases to pass unnoticed for years, although pretty fully apprised of them; and it is only when some single person of the requisite energy gives himself strenuously to the work, that the end is accomplished.

Now, if communities are in no case the benefactors of those authors who are fortunate, and never do anything whatever for necessitous literary men, or those connected with them, but leave all such good deeds to be done by a few individuals when they are to be done at all, there must be a fallacy in the outcry so invariably made when a particular case of poetical misery and death occurs. Why this outcry, when we ourselves are patiently seeing the system kept up by which such occurrences are inevitable? Why one nation taunt another, when it has made no provision to prevent the same occurrence falling in its own hands to-morrow? Why condemn a past age for the neglect of genius, when every day we are equally neglecting it? If in any one country under the sun there were public regulations insuring that men of genius should be well treated, then there might be some justice in twitting other countries with the want of such regulations. But while the whole matter is everywhere left, as it is, to mere chance, and the benevolent impulses of a very few persons, there can evidently be no rationality in such censure.

Granting that this point is established, it may be inquired how far it is *desirable*, and how far *possible*, to form systematic plans for a national succour and support to men of literary genius. It must at once occur

* And, after all, £1600 of this incumbrance remains, weighing down the spirits and energies of an amiable woman, whose life has for years been devoted without the least intermission to task-work undertaken for the discharge of this debt.

that there would be great difficulty in making any just arrangement of the kind, seeing that it must after all be confided to men whose judgment would be liable to bias, and who might therefore misdirect the funds. It must equally be obvious that there is great danger in endowing men for a special exertion of their intellects, since they are by that very endowment deprived of all but a very abstract kind of motive for exertion. A poet who had been sufficiently tuneful in poverty, might become mute under the influence of a comfortable pension. It is, no doubt, hard to come to this conclusion, for we often see nothing apparently wanting but an independent aliment to enable highly gifted minds to apply to tasks of great public usefulness; yet there are so many instances of indolence being induced by such regular supplies, that there can be no doubt whatever of the natural tendency of such causes to produce such effects. There is, therefore, a general disinclination to hear of provision being made by the public for literary men; and we can have no room to expect that such an arrangement will ever become part of the policy of any state, however civilised.

What hope, then, is left for the sons of genius? Only that, we fear, which is left to all fortuneless men—to work out a subsistence for themselves by their own exertions. This they may do either by ordinary professions, or by the supply of that literature which will yield immediate profit, leaving the higher achievements of the intellect to moments of leisure. Talents suited for a high walk may thus be expended on a humble one; great works may be forbidden; and thus the public, as well as the man of genius, may suffer. But, on the other hand, it may be expected that a very forcible and true genius will be stimulated by the very difficulties in its path, and work a way through them. Powers of self-helpfulness will be evoked; the spirit of independence, being nourished, will give additional value and character to the productions of the intellect; and thus the public and the author himself, instead of losers, may be gainers. The relief of unfortunate men of genius, how is this to be effected? Let it be left, as heretofore, to the kindly impulses that are ever found in the breasts of some of those who become the immediate witnesses of distress. A case of neglect may now and then, from peculiar circumstances, occur; but some such exceptions of evil are to be looked for in all human affairs. We would expect, however, to see men of literary abilities hereafter much less needful of external aid of any kind than they have been in past ages. Their productions are amongst the necessities of life in modern times, and their trade should therefore, in fair circumstances, be a good one. As their abilities, moreover, are superior to those of their fellow-creatures, so should they be more, instead of less, able to secure the means of keeping off want. It has ever been a prevailing sin of the literary class, fostered by the very cant which we aim at uprooting, to look to others for aid, to expect 'something to be done for them'; thus losing the benefit of their own inherent energies, and degrading that genius which it should be their aim to keep pure and unperturbed from the world. Again, there is a too common inclination amongst men of genius, either to a culpable negligence with regard to their affairs, or an extravagance equally ruinous, as if they were somehow to be independent of all the ordinary rules of prudence. It would be well for them to reflect that the greatest of their whole set—William Shakespeare—was careful of his means, and realised a competency, without, for anything we can see, incurring the odium of his fellows, and that Burns, with seventy pounds a-year, kept free of debt. Talk of the incompetency of attention to the affairs of common life with the high conceptions of the inventive mind, when Scott could perform every duty of a man of the world, at the same time that he produced his marvellous fictions! Let literary men, we say, undertake the care of their own interests in a manly and rational

spirit, and give a reasonable degree of attention to the days that are to come, and their fortunes must be equal to those of any other class of men in the same degree useful to the community.

THE MILL AND THE MANOR.

PART II.

On the day following the accident which we have recorded, the whole state of affairs at Crumble Hall was changed. Instead of wearing the appearance of a neglected tenantless mansion, as it had done for years past, it was now a scene of as much bustle and excitement as a fashionable country residence during the shooting season. Elegant carriages, belonging to the neighbouring gentry, were continually driving up to the dilapidated lodge, with inquiries regarding the young lady who was its accidental tenant. Expresses, borne by footmen and grooms, came and went between the house and the park-gate; for horses could not be driven up to Crumble Hall, on account of the 'drive' being tangled with weeds. Servants in elegant livery lounged about the entry of the mansion: the gossips and idlers of the village, attracted by the extraordinary change in the aspect of Crumble Hall, discussed the accident and its consequences in various parts of the domain. Even the few deer that were left scamped hither and thither over the park as if frightened out of their wits. In short, one day had effected a complete revolution in the aspect of the old manor-house itself, and of all around it.

The squire shrouded himself closer than ever in his favourite muniment room, but could observe from the window all that was going on. He stared in bewilderment and wonder at the extraordinary occurrences that were passing before his eyes. He could not comprehend how the accidental relief of a damsel, whom misfortune had overtaken, could possibly produce so extraordinary a commotion in his secluded establishment. In the midst of his reflections Charles Kennedy burst into the room in a state of great exultation. 'The crisis is past!' he exclaimed. 'She is out of danger. After a night of the most intense anxiety to us all, consciousness has returned, without any of those ill effects which were anticipated.'

The old gentleman sat in his high-back chair, and answered with as much dignity and calmness as the agreeable news—acting upon a really good heart—enabled him to assume, 'That he felt glad to hear the young woman was better.'

'And now, my dear uncle,' said Kennedy, 'let me intreat you not to be so rude to her parents, who still remain below, as not to see them. I am again the bearer of a message from them expressive of a wish to tender personally their thanks for your hospitality to their daughter. But you seem pale, agitated, my dear uncle,' continued Kennedy, perceiving the effect which unwonted excitement had wrought upon the recluse. The old gentleman passed his hand over his brow, and complained that he felt as if he were in a dream. The noise of the comers and goers distracted his ideas from the one subject they had been unremittingly fixed on for years. As to receiving company, that was quite out of the question. Was it not enough that they had invaded his house, and turned the public of Crumbleton loose into his park? 'And, sir,' added Mr Crumble, gradually recovering animation, 'I should be glad to know who these people are, that first place my house in a state of siege, and then would invade the sanctuary of my private leisure, by forcing their acquaintance upon me?'

'The gentleman is proprietor of the next estate!'

'What?' said Mr Crumble, 'the cotton-spinner who disfigured the prospect by a mass of unsightly building?'

At this moment Penthouse made his appearance with a message from the persons spoken of—Sir James and

Lady Spindler—even more urgent than that brought by Kennedy. 'I cannot see,' said the latter, 'how you can any longer resist these people's civilities.'

'Civilities!' returned the squire in an unusually vehement tone. 'Has not the man raised a huge brick abomination at the very foot of my park? Has he not changed the bed of the stream, which flowed in its wonted course since the days of Sir Hildebrand Crumble, who caused it to fill a fosse when our house was fortified in the times of "the Roses"? Did not the accident which has brought all this turmoil upon us lay half my domain under water? Has he not turned my house into a resort open to all comers, and my park into a bear-garden? Besides, is not the man a trader, a weaver, a purse-proud citizen, who will, peradventure, vauntingly juggle his purse in our ears? Has he not come perhaps to spy out the nakedness of the land? No, nephew, I am not for such men's civilities. A spinner of cotton is no company for a Crumble; indeed, I may be permitted to add, for an *Earl* of Crumbleton,' and he paused ere he added, *de jure*.'

Kennedy found it in vain to attempt answering these objections, and returned from the library to make the best excuses he could for his uncle's refusal to see the guests. Sir James was alone in a room, whose torn drapery, worm-eaten furniture, and dusty condition, showed that he was the first visitor who had been received in it for many years. The tact of Penthouse had managed to put the best face on affairs. He turned the comeliest sides of the chairs outwards, and covered the table with a county map to conceal the cracks and flaws. Kennedy, on returning to his guest, rested his apology on his uncle's secluded habits, and consequent aversion to new faces. Sir James Spindler replied in the most frank and cordial terms, that though he regretted losing this opportunity of making the acquaintance of so near a neighbour, he would not on any account attempt to give him pain by an unnecessary intrusion. 'I fear, however,' continued the worthy knight, 'that other, besides general causes, exist for Mr Crumble's hesitation to see me. Our proceedings on the Bampton estate are, I have reason to believe, displeasing to him?'

Kennedy candidly owned that they were. 'The near neighbourhood of a cotton-mill is not desirable anywhere.' 'That is very true; but I bought the estate for the purpose of building a factory, and with the express understanding that I should do so. I trust, however, in time to make converts both of yourself and your uncle to a faith in the utility and revivifying powers of my cotton-mill upon this decaying neighbourhood.'

'You will not have me to convert, Sir James,' said Charles; 'I am perfectly alive to the share which the wonderfully rapid growth of manufactures in this country has had in bringing her to the pitch of wealth and power which she has attained. I will own frankly, that when I first beheld the damage your buildings had done to a prospect I loved in my youth, I was much excited against the projector. Further reflection has, however, convinced me of the folly of my regrets. Nay, I will go so far as to add, that if my good but mistaken uncle, instead of draining his estates and exhausting his means to follow up his claim to a useless peerage, had employed his fortune in some manufacturing speculation, the present melancholy condition in which—it is too notorious for concealment—our property has sunk, would certainly have been averted.'

Sir James appeared surprised to hear such sentiments from the lips of the heir-apparent to the Crumbleton manor. He shook him cordially by the hand, and congratulated himself in having only one instead of two converts to make. At this moment Lady Spindler entered from the room in which her daughter lay. Sir James presented Kennedy to her, and she was profuse in her thanks for the hospitable kindness shown to her daughter. 'She is now well enough to be removed,' added the lady, 'and we shall relieve you of our intrusions immediately.'

'Before we go, it will be highly necessary,' said Sir James, 'that Mr Kennedy afford us an opportunity of thanking Mina's preserver.'

'True,' interrupted her ladyship, 'the gamekeeper—Noble fellow! we can never reward him sufficiently. My daughter has just narrated to me the whole of the circumstances, and some adequate reward must be planned for his acceptance.'

Charles blushed, and was for some time unable to answer. At length, though seriously embarrassed, he explained the mistake, and owned that the good fortune of having rescued the young lady was his. The parents overwhelmed him with gratitude, and at that moment one of those sincere friendships was begun between Sir James Spindler and young Kennedy which are not soon or easily ended. It was now announced that Miss Spindler was ready to be removed into the carriage, which had been driven up to the house; thanks to the knowing foresight of Penthouse, who had set all the village idlers at work to clear the drive. A short time after the invalid was on her way to her own home, all appearance of bustle and excitement subsided at Crumble Hall, both within and without; the drawing-room windows were closed, and the recluse returned to his favourite studies. Penthouse lounged as many hours a-day as heretofore in the library, poring over 'The British Classics,' because he had nothing better to do; and Kennedy was left to pass the time as best he might, in planning schemes to avert the slow but certain ruin that was creeping over the family, and to cement, by frequent visits, the friendship he had formed with the Spindlers, whose dwelling was but a short distance from Crumbleton.

After a time, he discovered that this intimacy was extremely distasteful to his uncle. In conversations which he had held on this subject, Charles always endeavoured to divert Mr Crumble from the mistake in which he had so long persevered. He showed that the same energy, applied to some feasible plan for bettering their condition, would be far more beneficial. The old squire heard these sentiments more in sorrow than in anger. He complained that the new acquaintance was filling his nephew's mind with sentiments quite unworthy of the last of the Crumbles, whose ancestors had abstained from every profession save arms, up to the period of their earliest records. With a view to give these sentiments a deeper meaning, he would take his nephew to the picture-gallery, and endeavour to awaken aristocratic sentiments by showing him the portraits of his ancestors. Some of these quaint and ancient effigies were knights clad in armour, and seated on horseback on very uncomfortable saddles; others, clothed in blue uniform, with tremendous epaulettes and very long queues, were the naval heroes of the family. Concerning each of these ancestors Mr Crumble would indulge his nephew with some wonderful anecdote, calculated, he thought, to raise the young man's respect for noble blood and family honours. At length Charles gave up all hopes of either convincing his uncle of his mistake, or of bringing him and his new friends, the Spindlers, upon visiting terms.

Months passed away; and while new difficulties surrounded the inmates of the manor, prosperity favoured the mill. The buildings once finished, operations were begun; machinery was set up, and the village of Bampton soon filled with workpeople. Even the trade of Crumbleton revived. The old schoolmistress nearly doubled her number of pupils; the landlady of the Tabard obtained better employment than lounging about his door; and an unexpected stranger was no longer surrounded by a crowd; for his appearance ceased to be a rarity. Meanwhile dark clouds lowered over the house of Crumble. The whole of the costs in the appeal for the peerage had not been paid, and threats were becoming daily more urgent of 'attaching' the unsuccessful appellant, which meant putting him into prison until the debt was discharged. Kennedy had already sacrificed the produce of his commission to pay

the most urgent of these claims; but one still remained, for which he saw no better escape than the sale of the family possessions.

It was deep winter. The snow lay thickly on the ground. The little river ceased to flow over the securely constructed dam which had been substituted since the accident. The ice lay so thickly upon the water, that at intervals during the day the factory boys and girls were sliding and skating, and making the air ring with their joyous exclamations. Carts and wagons came and went along roads. The sound of machinery seldom ceased within the factory during the day. Life, in its greatest activity, reigned in the neighbourhood of the mill. It is not to be wondered at, therefore, that Kennedy, long used to the bustle of a camp, should often escape from the desolate solitude of Crumble Hall, and spend some of his time in examining the various processes of the manufacture of cotton. An attraction, however, existed in the dwelling-house of the wealthy manufacturer which took him there much oftener. On the morning to which we allude, he was returned from his daily visit to Mrs and Miss Spindler, when, to his surprise, he saw Sir James's carriage roll away from the door of Crumble Hall. On entering, he was met by Penthouse, who, with the most perplexed countenance, announced that Sir James had been there, had insisted on seeing the squire; that they had met, and that the interview, so far as he could learn, was rather stormy. Charles hastened to his uncle, and found him unusually agitated. On seeing his nephew, he made a violent effort to check his feelings, whatever they were, and to assume that collectedness which was, he thought, becoming in the head of the house of Crumble. In a tone of severity, he inquired of his nephew when he had last seen Miss Spindler?

Kennedy instantly blushed up to the eyes. He tried to answer, but stammered so much, that what he said was inaudible. 'Despite,' said the old squire, 'my aversion to company in general, and to these people in particular, yet the father of that young woman forced himself into my library this morning, and whether agreeable or not to me, insisted on an interview. The subject of it, sir, you can easily divine.' Charles, who had recovered himself, partly declared he had not the remotest idea.

'Would you believe it, sir?' said the haughty squire, 'your new friend, the spinner of cotton, the employer of those noisy urchins who daily disturb my meditations by their vulgar acclamations, has had the presumption to hint at the probability of an alliance between our families.'

'Of what nature?' inquired the nephew with an imitation of innocence really wonderful, considering the emotions of dread and hope which were contending for mastery within him.

'Would you trifle with me, sir?' inquired the uncle in a tone of severity.

'I do assure you,' was the reply, 'that I have not the smallest notion of what kind of alliance Sir James proposed.'

'Then you have not sought the hand of his daughter?' This was a home question; but after a little consideration the young man answered frankly, boldly: 'No, uncle; I can say with a clear conscience that I have not sought Miss Spindler in matrimony; no allusion to any such project has ever entered into our conversation during the many delightful hours I have spent in her and her family's society.' Mr Crumble brightened up at this. There was, he thought, some sense of family dignity still left in his nephew, despite his frequent visits to the mill-owner and his growing love for the mechanical arts. Hoping to have such an anticipation confirmed, he made further inquiries into the nature of the intimacy which existed between him and their neighbours. After a little consideration, Charles replied in these terms, 'My dear uncle, it would be improper in me to deny that the feelings with which I regard Miss Spindler are the strongest it is possible for man to experience; but I

have always looked upon their realisation as hopeless. In the first place, the circumstances under which we first became acquainted give me, in the eyes of the world, a strong claim to her regard. Now, I am very unwilling to press that as a claim which, under other circumstances, would have been a voluntary solicitation. I am said to have saved her life, and upon that ground it is doubtful whether too high a sense of gratitude would not make her refusal of me the cause, to her, of greater pain than I have a right to inflict. For of course, whatever her feelings may be, her friends would not be justified in consenting to her union with a penniless man, the scion of a broken family.' This speech being by no means accordant with his views, was very disappointing to the squire of Crumbleton. 'What!' he asked, 'do you expend all these delicate scruples upon a weaver's daughter?—a woman whom an alliance with us would elevate? who would have the honour of being the first of her class to be introduced into the Crumble family, which has remained untainted with plebeian blood since the Conquest? who would blot our escutcheon with quarterings of—' and here the old gentleman paused, to consider whether it would not be undignified to give way to a bit of playful extravagance—'who would, peradventure, as I was about to observe, quarter on our shield a spinning-jenny with shuttles *volant*, engraved! Charles, taking advantage of this little specimen of Herald's college humour, ventured to contradict his uncle—an experiment which, on such a subject, he knew to be highly dangerous. 'There is no danger of such a misfortune, I assure you. The fact is, Sir James Spindler's family is as old as ours!' As if stung by some bitter retort, the squire eagerly seized the baronetage to confound his nephew from his pages.

'They are,' continued the latter, 'the Spindlers of Sussex.'

This simple piece of information perplexed rather than pleased the old gentleman. Incredulous, but anxious to satisfy his doubts, he forthwith left the room, desiring his nephew to follow him to the library. Mr Crumble went straight to a large folio, and opening it with the utmost eagerness, became so deeply immersed in the genealogy of the Spindlers, that all Charles's information concerning the young lady and her father the cotton-spinner went for naught. Volume after volume was consulted and replaced. At length the old gentleman, uttering an exclamation of wonder, ejaculated, 'Ennobled in the thirteenth century, quartered with royalty in the fourteenth, and in the peerage down to the Revolution! A man with this splendid lineage turned weaver! Alas, alas, what are we coming to!'

Poor Kennedy was dying of impatience to hear what had passed, in the interview between Sir James and his uncle, concerning the subject next his heart, but the old gentleman was so overcome with wonderment at the fact of the owner of a better pedigree than his own taking to trade, that he could give no satisfactory answer to the query. Hence Kennedy still remained in suspense—a state in which he must be for the present left, for it is now our business to follow Sir James Spindler, as he drove down the avenue to the Crumbleton village, after the unsatisfactory interview with the squire. He had previously arranged to meet his agent at the Tabard on some matter connected with Kennedy and his uncle. The peculiar notions and pride of the squire had, however, disarranged these plans.

On reaching the rustic porch of the inn he beheld Mr Brevor, his agent, in close conversation with two strangers; their business seemed urgent, and they appeared annoyed at being recognised by Sir James's attorney. Immediately the carriage came in sight, they made off towards Crumble Hall. 'You need not take out the draught of the deed I desired you to make; it will be useless now,' said Sir James as he entered the best room of the little inn, followed by his man of business. 'The peculiar notions of the eccentric old lord of the manor will not allow me to carry out my project—at all events

not for the present. By the way, who were those two men you were talking to?

'Mr Tap, the Chancery tipstaff, and an assistant. The poor old squire! he will have his pride lowered now; for to-night he will sleep in the Fleet prison.'

Sir James was much shocked at this news, and made further inquiries. 'It is rather odd,' began his informant, 'that I should meet Tap here, for I was concerned for the respondent in the Crumbleton peerage case, and know all the particulars. The truth is, the tipstaff is the bearer of an attachment for costs, and must, as in duty bound, convey the appellant to close quarters, and keep him there until the costs are paid.'

'Be kind enough to follow me into the carriage,' said Sir James, hastily entering it himself. He ordered the coachman to drive back to Crumble Hall as quickly as possible. On reaching the old manor-house, he lost not a moment, but proceeded to the library. Here a scene presented itself which would have appalled the stoutest heart. The Chancery officer had already executed his commission; the immediate effect of which was to render Mr Crumble senseless; in which state he lay in a chair. Penthouse, the old faithful servant, was weeping like a child, and Kennedy was struggling with the most violent grief while trying to revive his uncle. Spindler, when the first emotions produced by this melancholy scene were mastered, quietly induced the tipstaff and his companion to accompany him to the drawing-room, where Brevor was waiting. The after-proceedings of the worthy knight were few, but decisive. He desired Brevor to examine Mr Tap's papers, with a view to ascertain correctly the amount of the demand. This done, he arranged at once with the officer for its discharge by cheque, and a guarantee for its due payment by the London bankers from Brevor, which was perfectly satisfactory from so well-known and eminent a lawyer. Mr Tap, glad to escape from a scene which he owned shook even his nerves, took his departure, and the master of Crumbleton was free.

This information was cautiously conveyed through Kennedy; but still the recluse was for the rest of that day unable to comprehend the nature of the events which had passed. His reason seemed clouded, and he was left to enjoy that quiet which was so congenial to his habits. When Kennedy returned to his true friend, he felt oppressed with a weight of obligation that seemed for him difficult to bear, and impossible to remove. But Sir James knew how to make it sit easily. 'Things have come to a crisis with a vengeance!' he exclaimed, as he returned Charles's warm grasp of the hand; 'and there is no more necessity for that caution which both myself and Lady Spindler have been obliged to use in reference to a subject which has caused us much uneasiness. Motives of honour, which cannot be too highly appreciated, have, it is evident, prevented you from divulging certain feelings towards a certain young lady which, it has been long manifest to us, exist. Those feelings, we have also ascertained, are mutual. Your honourable reserve was, we found, making the young lady miserable, destroying her spirits, and undermining her health. I therefore took the bold step of consulting your uncle on the matter. He would not, however, even hear me. My next application may, however, be more successful. Indeed, there is another affair I wish to consult you both about; but I will not open it now, for I see you are agitated.' Charles, who trembled from head to foot with the most acute emotions, begged Sir James to go on; for though filled with happiness, he was, he said, too old a soldier to feel much agitated.

'Well, then, I have simply to ask whether you would like to become a cotton-spinner?'

How Charles answered this question, was shown by what took place at Bampton and Crumble Hall during the month following this interview. The neighbourhood felt the effects of his reply for miles round, and Crumbleton had no longer occasion to envy the prosperity of Bampton.

Crumble Hall was invaded by workmen: gardeners

and foresters were spread over the lawn and park; carpenters and smiths were dotted about the enclosures; and the sound of the hammer was heard where nothing had been previously audible but the cawing of rooks. All these people were superintended by Penthouse, who gave them lectures on the belles lettres; and having been idle himself for so many years, wondered how they could get through the quantity of work they performed.

By slow and cautious degrees, Kennedy had managed to get his uncle's consent to give to a Spindler a new branch of the family tree. The squire of Crumbleton had pored over the respective pedigrees for more than a week, and it was only when he discovered that Sir James was the first man of his family who had done anything useful, or dabbled in trade, that he gave his consent. He, however, stipulated that the male heir *in futuro* should, on attaining his majority, obtain letters patent to change his name to Crumble, that the much-cherished name should not be lost to posterity. And he insisted that the marriage ceremony should be performed by a right reverend bishop, who was his fifth or sixth cousin, reserving to himself the right of giving away the bride.

All this was done exactly to his mind. The Bampton cotton factory was managed entirely by Kennedy, whom Sir James—retiring from active business—took into partnership. Devoting an energetic and well-formed mind to the undertaking, it flourished; and Crumble Hall gradually regained the stately affluence it had formerly enjoyed. The old squire lived to see this consummation, to dandle on his knee a future applicant for the royal letters patent, and to be cured of his dislike to the Mill for the sake of the wonders it had worked on the prosperity of the Manor.

LOITERINGS IN FRANCE—1844.

VISIT TO GEROVIA.

SITTING at the open windows of his hotel at the north side of the Place de Jaude, in Clermont, the traveller will probably be interested in observing, clear over the tops of the houses on the south, and at the distance of four to five miles, a hill singular in its shape and appearance. All the other hills in this part of Auvergne are less or more conical, but this one resembles a huge table, its rugged sloping sides appearing to terminate in a plain, level with the rounded tops of the neighbouring mountains. Thousands of travellers doubtless bestow only a momentary attention on this strangely-shaped mass, and there an end of the matter; but others, inquiring its name, perhaps learn that few mountains in France have obtained such celebrity, and accordingly spend a day's excursion upon it before leaving the country. I wish to say a few words respecting this hill.

Anciently, Gaul—modern France—was inhabited by a number of independent tribes, each in itself a little nation; a few of these nations only uniting on occasions of common and extreme danger. Taking advantage of this weakness of organisation, the Roman republic despatched Julius Cæsar with an army to effect the conquest of the country. Successful everywhere he went, this sagacious general was baffled by the heroism of the Avern, the tribe who inhabited what we now term the Auvergne mountains: with them his motto was anything but—*veni, vidi, vici*. Although a rude and uncultivated people, these mountaineers displayed considerable ingenuity in defending themselves. They fortified their towns with massive beams of wood, fixed in the ground, and crossed in opposite directions, with layers of earth and stones in the intervals. Walls of this kind were as much as forty feet in thickness, and of as great a height, the exterior base being protected with large stones, and sometimes on the top there were towers composed of wood and skins, impervious to attack. Gunpowder being unknown in those times, the Romans could only bring their battering-rams to bear on such places; and if the

fortification was on a hill, these engines were generally useless. When Caesar, at the head of six legions, entered the territories of the Averni, he was brought to a pause before Gergovia, a city strongly fortified in the manner we have described, on the flat top of the hill which we behold from our windows in Clermont. A more inconvenient situation for a city could not possibly be selected, for it is approachable on any side only by long and steep ascents; but convenience in these ages of barbarism was not thought of, provided life and property were secure.

According to Caesar's own account of his attack on Gergovia,* he found it one of the toughest jobs he had ever been engaged upon. The gallant Averni, headed by Vercingetorix, and assisted by detachments from other Gaulish tribes, had a complete command of the hill; and with enormous stones, darts, and arrows, they destroyed the besiegers when they attempted to approach. The Roman general secured a favourable position, as he tells us, on a neighbouring height, and by various stratagems tried to circumvent the Averni. As a last resource, he led on an attack by the back part of the hill where the ascent is less abrupt, and was able to attain a footing within an outwork of stones; but he found it necessary to retreat from this dangerous position. The Gauls, inspired by the cries of their women, who appeared with dishevelled hair on the ramparts, drove the most impetuous of the legions back with great slaughter. Seven hundred Romans fell in the engagement. After spending several days fruitlessly in manœuvring on the plain, with a view to seduce the Gauls from their vantage ground, Caesar—the conqueror of the world—was forced to abandon the siege. The reason which he assigns for his retreat—that he had done enough to confirm the courage of his men, and abate the pride of the Gauls—is amusingly disingenuous; an excuse, at least, which would have scarcely passed muster at the Horse Guards. He was, in point of fact, beat by the Gergovians.

Interesting from the figure which Gergovia thus makes in ancient history, as well as from its geological character, my friend and I resolved on making it the object of a day's pilgrimage. We accordingly hired a car for the purpose; and one morning pretty early, along with Guillaume as guide, sallied out on the proposed journey. Our way lay almost due south from Clermont, and conducted us along a series of miserable narrow roads, ascending between the rude walls which bound the small vineyards and fields on the lower slopes. Ere we reached the limits to which the car could advance, the day became intensely hot. Gad-flies flew about us in swarms, and lighting on the poor hack which dragged our vehicle, drew blood at a thousand points. Near the village of Ceyrat we abandoned the car, and took to clambering the ugly broken path, which was not particularly easy; for, while one hand was engaged in holding an umbrella overhead to intercept the rays of the sun, the other was busy keeping the flies at a proper distance.

Our first object was to ascend Montrognon, whose western flank we had already gained. This is a hill remarkable among many remarkable hills. It is a tolerably regular cone, broad at the base, and terminating in a small plateau, on which stands the tall and picturesque ruin of a castle. Unlike the puy we had formerly visited, it is a mass of columnar basalt resting on calcareous matter, the basalt to all appearance being the relic of a stream of lava which had flowed over the fresh-water limestone of the plain, and been subsequently raised to its present position. Having scrambled across the uppermost vineyards, we reached a steep slope, an entire tract of loose basaltic stones, and on this we climbed to the top of the eminence. Although considerably lower than the range of puy at a distance of a few miles in the north-west, the view from the apex was charming, for it immediately overlooked on all

sides fertile rural scenes. The ruin, so conspicuous for many miles across the Limagne, occupied the whole plateau, and must at one time have been a massive keep, with outworks—the stronghold of one of those Auvergnat barons whose oppressions led to their extirpation in the reign of Louis XIII. The walls remaining, built of the blue basalt of the hill, measured eight feet in thickness, and may yet endure the returning blasts of a hundred winters.

To get to Gergovia, it was necessary to descend the hill on its south side, and from the valley below climb another eminence towards the east. Two hours were consumed in this intermediate journey—heat awful, and the shade of every walnut and cherry-tree thankfully accepted. Guillaume's flask of *vin-ordinaire* and water, cooled at a fountain by the way, was in frequent requisition. The road conducted us by what must be called the back of Mount Gergovia—supposing the side next Clermont to be its face—and most likely by the direction in which Caesar made his attack. Shaped, as I said, like a table, its upper edge for a space of forty to fifty feet is a crag, bristling with rocks and splinters; and when one struggles his way over these barriers, he finds himself on a plain covered with about as many stones as blades of grass—an arid stony waste—which, however, at the time of our visit, afforded a scanty pasture to a flock of sheep.

And here stood the city of Gergovia. We walked about to discover if possibly any remnant were visible; but not a remnant, nor the faintest outline of a remnant, can be discovered. The plain seemed to be from two to three miles in length from east to west, by from a quarter to an eighth of a mile across. The ground having been ransacked by antiquaries, has yielded up a number of Gaulish medals, weapons, utensils, and other objects. The remains of a cavern has also been discovered. The exterior defences having been constructed chiefly of timber, time has long since swept them from existence; and the same agency has destroyed the interior buildings, which in all likelihood were of the same rude and simple materials. Along the verge of the plateau, the heaps of stones are more than usually numerous; and these may have been concerned in giving strength to the walls, from which the Gergovians committed such havoc on their enemies.

Satisfied with an inspection of the plateau, we proceeded down the steep fronting Clermont, with the view not only of returning homeward, but of examining the geological structure of the mountain. The north side, which we descended, is peculiarly favourable for this kind of scrutiny. The torrents of winter have hewed a ravine of considerable depth, from the higher to the lower grounds, and in which the various strata, one above another, are exposed to the prying curiosity of the tourist. From an observation of the ravine, as well as of the upper part of the hill, it appears that the whole protuberance is an alternation of currents of basaltic lava with the calcareous strata of the fresh-water formation. First, on a level with the plain, we have a bed of yellowish-white limestone, full of the organic remains which distinguish the general substance of the Limagne. Then comes a thick covering of lava, which had flowed from a neighbouring volcano, and inserted itself into all the irregularities of the soil over which it poured. Above this hard rock comes calcareous or fresh-water strata again, here and there blended with another stream of basaltic lava which had flowed over all, and formed what may be called a top-dressing to the heap. What countless ages must have elapsed before this curious alternation of sedimentary and volcanic matter could have been effected—ages to which the historical period—Caesar's visit, for example, nineteen hundred years ago—is but a day!

Gergovia is not singular in its constitution. A number of other hills in its vicinity exhibit similar appearances. The probability is, that the whole originally formed one mass. By the washing away of the softer intermediate parts, an ancient plateau has been divided

* Wars in Gaul, book vii.

into separate hills. Alternate upheaving and depression by subsequent subterranean agency have, in all likelihood, helped to complete the phenomenon. That everything has been very much as it is—cold, hard, and fixed—here and in other parts of Auvergne for two thousand years, is beyond a doubt. Cesar saw the country as it now appears to the tourist; nor does it seem that he was at all aware that the mountains over which he led his legions had once smoked and raged like Vesuvius.

Latterly, the ravine on the face of Gergovia has been rapidly enlarging towards the valley beneath; masses of the calcareous strata have been undermined by the torrents, bringing down with them the superincumbent matter and portions of the vineyards which decorate the lower flanks of the mountain. From this and other quarters, great quantities of rubbish are annually floated into the Allier, and thence into the Loire, filling their beds, and rendering them almost useless to navigation. Fragments of basaltic rock from Gergovia and its kindred mountains are daily rolling on their way down the beds of these rivers, forming, by their mutual abrasion, the gravel and boulders which in summer appear in long dry reaches on their banks. And thus, in process of ages, are massive mountains of lava frittered down to the pebbles beneath our feet. Is anything insignificant?

It would be reasonable for an inquiring mind to ask, if there be no expiring manifestations of the heat which once found vent in the volcanoes of Auvergne. The only existing symptom of this ancient combustion is found in the hot springs of Vichy, Royat, and Mont d'Or. The high temperature of these waters is, with probability, traced to the same agency which in former times produced the puya we had been visiting.

These hot mineral waters, however, are less singular than another kind of springs not uncommon in Auvergne, two of which, and by far the most remarkable, rise within the outskirts of Clermont. The day after our return from our mountain excursion found our party threading its way into the suburb of St Alyre, in quest of its famed springs; which we at length alighted upon within a private garden. These waters, which gush in considerable volume from the ground, are called Fontaines Petrifiantes; but this is scarcely correct. Calcareous in their nature, they only cover with a yellowish fawn-coloured crust any object with which they are long in contact. Being conducted by artificial channels from their source, the water drops from them, and forms vast stalactitic aggregations of limestone. One of the masses, in progress of increase at the rate of two or three inches per annum, forms a substantial bridge across a rivulet. The formation of travertine is so ordinary a phenomenon, that it is no wonder, and I should not think of expatiating on the subject, unless for the purpose of showing my countrymen what may be done by ingenuity to make a spring of this nature useful in the arts, or, to speak in a language perhaps better understood, useful in turning the penny.

Led by a damsel, the naïd of the fountain, we are conducted through the garden to an erection of boards, a rude hut, into the roof of which we observe the water precipitated from its conduit. Opening the door, we perceive a house full of spray. The water, diverted into sub-rills, is dashed and splashed about on the floor, and on tiers of shelves, in a very odd sort of way, being permitted, after performing this service, to escape by a channel beneath. Looking through the spray from the multitude of cataracts, we perceive that, scattered all over the place, on the floor and on the shelves, there lie moulds of medals, and other objects, all in the process of receiving an incrustation. The spray falling in showers, deposits minute particles of the substance held in solution in the water, and which are so fine, that the water appears clear to the eye. In about three months a mould, an eighth of an inch deep, is filled with the deposit, and yields a cast as exact and beautiful as if cut from a piece of polished stone. The casts are of two varieties. Those produced by the spring to

which we were first conducted are of a yellow tinge, and as uniform in the grain as a piece of hone. The other spring, which dashes into a different receptacle, yields casts containing crystalline particles, and have a glittering mixed appearance; they are also less fine in their outlines.

After satisfying our curiosity with the operative part of the establishment, we entered by invitation the *salle de commerce*—a store for the sale of products of the springs. In this collection there was much trash, in the form of incrustated eggs, fruits, nests of birds, and various small animals; but there was likewise much to please a visitor of taste. The medals of classic figures, and heads of distinguished men, were particularly attractive. We bought a few of these elegant objects as trophies of French art. Vast quantities are disposed of in Vichy and the other watering-places of Auvergne; and, I believe, there is also a *dépôt* for them in Paris. The greater number are mounted by their purchasers as ladies' brooches. At the prices charged, from two to three francs each, it may be said that the sale of these curiosities, which cost the proprietor of the springs almost nothing, must be no unprofitable trade.

'THE GIFT.'

THE GIFT is an American annual of great typographical elegance, and embellished with many beautiful engravings. It contains an article, which, for several reasons, appears to us so remarkable, that we leave aside several effusions of our ordinary contributors in order to make room for an abridgment of it. The writer, Mr Edgar A. Poe, is evidently an acute observer of mental phenomena; and we have to thank him for one of the aptest illustrations which could well be conceived, of that curious play of two minds, in which one person, let us call him A., guesses what another, B, will do, judging that B will adopt a particular line of policy to circumvent A.

THE PURLOINED LETTER.

At Paris, just after dark, one gusty evening in the autumn of 18—, I was enjoying the twofold luxury of meditation and a meerschaum, in company with my friend C. Auguste Dupin, in his little back library, or book-closet, *au troisième*, No. 33, Rue Dunôt, Faubourg St Germain. For an hour, at least, we had maintained a profound silence, when the door of our apartment was thrown open, and admitted our old acquaintance, Monsieur G—, the prefect of the Parisian police.

We gave him a hearty welcome. The prefect sat down, and shortly disclosed a most perplexing case, in which his professional services had been in requisition. His story was this. 'I have received information that a certain document, of the last importance, has been purloined from the royal apartments. The individual who purloined it is known; this is beyond a doubt, for he was seen to take it. It is known also that it remains in his possession. The person on whom the theft was committed is a certain royal personage, a female, over whom the holder of the document has gained by this means a dangerous ascendancy—her honour and peace are jeopardised.'

'But this ascendancy,' I interposed, 'would depend upon the robber's knowledge of the loser's knowledge of the robber. Who would dare—'

'The thief,' said G—, 'is the minister D—, who dares all things—those unbecoming, as well as those becoming a man. The method of the theft was not less ingenious than bold. The document in question, a letter, had been received by the personage robbed while alone in the royal *boudoir*. During its perusal, she was suddenly interrupted by the entrance of another exalted individual, from whom especially it was her wish to conceal it. After a hurried and vain endeavour to thrust it in a drawer, she was forced to place it, open as it was, upon the table. The address, however, was uppermost; and the contents thus unexposed, the letter

escaped notice. At this juncture enters the minister D—. His lynx eye immediately perceives the paper, recognises the handwriting of the address, observes the confusion of the person addressed, and fathoms her secret. After some business transactions, hurried through in his ordinary manner, he produces a letter somewhat similar to the one in question, opens it, pretends to read it, and then places it in juxtaposition to the other. Again he converses for some fifteen minutes upon the public affairs. At length, in taking leave, he takes from the table the letter to which he had no claim. Its rightful owner saw, but of course dared not call attention to the act, in the presence of the third person, who stood at her elbow. The minister decamped, leaving his own letter, one of no importance, on the table. The power thus attained has, for some months past, been wielded for political purposes to a very dangerous extent. The person robbed is now thoroughly convinced, every day, of the necessity of reclaiming the letter. But this of course cannot be done openly. In fine, driven to despair, she has committed the matter to me.

'It is clear,' said I, 'as you observe, that the letter is still in possession of the minister; since it is this possession, and not any employment of the letter, which bestows the power. With the employment, the power departs.'

'True,' said G—: 'and upon this conviction I proceeded. My first care was to make thorough search of the minister's hotel; and here my chief embarrassment lay in the necessity of searching without his knowledge. Beyond all things, I have been warned of the danger which would result from giving him reason to suspect our design.'

'But,' said I, 'you are quite *au fait* at these investigations. The Parisian police have done this thing often before.'

'O yes; and for this reason I did not despair. The habits of the minister gave me, too, a great advantage. He is frequently absent from home all night. His servants are by no means numerous. They sleep at a distance from their master's apartments, and, being chiefly Neapolitans, are readily made drunk. I have keys, as you know, with which I can open any chamber or cabinet in Paris. For three months, a night has not passed, during the greater part of which I have not been engaged, personally, in ransacking the D— Hotel. My honour is interested, and, to mention a great secret, the reward is enormous. So I did not abandon the search until I had become fully satisfied that the thief is a more astute man than myself. I fancy that I have investigated every nook and corner of the premises in which it is possible that the paper can be concealed. Yet, neither is the letter on the person of the minister. He has been twice waylaid, as if by footpads, and his person has been rigorously searched under my own inspection.'

'Suppose you detail,' said I, 'the particulars of your search of the premises.'

'Why, the fact is, we took our time, and we searched everywhere. I have had long experience in these affairs. I took the entire building, room by room, devoting the nights of a whole week to each. We examined first the furniture of each apartment. We opened every possible drawer; and I presume you know that, to a properly-trained police agent, such a thing as a *secret* drawer is impossible. Any man is a dolt who permits a "secret" drawer to escape him in a search of this kind; the thing is so plain. There is a certain amount of bulk—of space—to be accounted for in every cabinet. Then we have accurate rules. The fiftieth part of a line could not escape us. After the cabinets, we took the chairs; the cushions we probed with the fine long needles you have seen me employ. From the tables we removed the tops.' 'Why so?'

'Sometimes the top of a table, or other similarly arranged piece of furniture, is removed by the person wishing to conceal an article; then the leg is excavated,

the article deposited within the cavity, and the top replaced. The bottoms and tops of bed-posts are employed in the same way.'

'But could not the cavity be detected by sounding?' I asked.

'By no means, if, when the article is deposited, a sufficient wadding of cotton be placed around it. Besides, in our case, we were obliged to proceed without noise.'

'But you could not have removed—you could not have taken to pieces *all* articles of furniture in which it would have been possible to make a deposit in the manner you mention. A letter may be compressed into a thin spiral roll, not differing much in shape or bulk from a large knitting-needle, and in this form it might be inserted into the rung of a chair, for example. You did not take to pieces *all* the chairs?'

'Certainly not; but we did better. We examined the rungs of every chair in the hotel, and, indeed, the joinings of every description of furniture, by the aid of a most powerful microscope. Had there been any traces of recent disturbance, we should not have failed to detect it *instantly*. A single grain of gimlet-dust, or sawdust, for example, would have been as obvious as an apple. Any disorder in the glueing—any unusual gaping in the joints—would have sufficed to insure detection.'

'Of course you looked to the mirrors, between the boards and the plates; and you probed the beds and the bedclothes, as well as the curtains and carpets?'

'That of course; and when we had surveyed every particle of the furniture in this way, then we examined the house itself. We divided its entire surface into compartments, which we numbered, so that none might be missed; then we scrutinised each individual square inch throughout the premises, including the two houses immediately adjoining, with the microscope as before.'

'The two houses adjoining!' I exclaimed; 'you must have had a great deal of trouble?'

'We had; but the reward offered is prodigious.'

'You explored the floors beneath the carpets?'

'Beyond doubt; we removed every carpet, and examined the boards with the microscope.'

'And the paper on the walls?' 'Yes.'

'You looked into the cellars?'

'We did; and as time and labour were of no importance, we dug up every one of them to the depth of four feet.'

'Then,' I said, 'you have been making a miscalculation, and the letter is *not* upon the premises, as you suppose.'

'I fear you are right there,' said the prefect. 'And now, Dupin, what would you advise me to do?'

'To make a thorough re-search of the premises.'

'That is absolutely needless,' replied G—. 'I am not more sure that I breathe than I am that the letter is not at the hotel.'

'I have no better advice to give you,' said Dupin. 'You have, of course, an accurate description of the letter?'

'Oh yes!' And here the prefect, producing a memorandum-book, proceeded to read aloud a minute account of the internal, and especially of the external appearance of the missing document. Soon after finishing the perusal of this description, he took his departure, more entirely depressed in spirits than I had ever known the good gentleman before.

In about a month afterwards he paid us another visit, and found us occupied very nearly as before. He took a pipe and a chair, and entered into some ordinary conversation. At length I said—

'Well, but, G—, what of the purloined letter? I presume you have at last made up your mind that there is no such thing as overreaching the minister?'

'Too true; I made the re-examination, however, as Dupin suggested; but it was all labour lost, as I knew it would be.'

'How much was the reward offered, did you say?' asked Dupin.

'Why, a very great deal—a very liberal reward—I don't like to say how much precisely; but one thing I will say, that I wouldn't mind giving my individual check for fifty thousand francs to any one who could obtain me that letter. The fact is, it is becoming of more and more importance every day; and the reward has been lately doubled. I would really give fifty thousand francs, every centime of it, to any one who would aid me in the matter.'

'In that case,' replied Dupin, opening a drawer, and producing a check-book, 'you may as well fill me up a check for the amount mentioned. When you have signed it, I will hand you the letter.'

I was astounded. The prefect appeared absolutely thunderstricken. For some minutes he remained speechless and motionless, looking incredulously at my friend with open mouth, and eyes that seemed starting from their sockets; then, apparently recovering himself in some measure, he seized a pen, and after several pauses and vacant stares, finally filled up and signed a check for fifty thousand francs, and handed it across the table to Dupin. The latter examined it carefully, and deposited it in his pocket-book; then, unlocking an *escritoire*, took thence a letter and gave it to the prefect. This functionary grasped it in a perfect agony of joy, opened it with a trembling hand, cast a rapid glance at its contents, and then, scrambling and struggling to the door, rushed at length unceremoniously from the room and from the house, without having uttered a syllable since Dupin had requested him to fill up the check.

When he had gone, my friend entered into some explanations.

'The Parisian police,' he said, 'are exceedingly able in their way. They are persevering, ingenious, cunning, and thoroughly versed in the knowledge which their duties seem chiefly to demand. Thus, when G—— detailed to us his mode of searching the premises at the hotel D——, I felt entire confidence in his having made a satisfactory investigation, so far as his labours extended.'

'So far as his labours extended?' said I.

'Yes,' said Dupin. 'The measures adopted were not only the best of their kind, but carried out to absolute perfection. Had the letter been deposited within the range of their search, these fellows would beyond a question have found it.'

I merely laughed, but he seemed quite serious in all that he said.

'The measures, then,' he continued, 'were good in their kind, and well executed; their defect lay in their being inapplicable to the case and to the man. A certain set of highly ingenious resources are, with the prefect, a sort of Procrustean bed, to which he forcibly adapts his designs. But he perpetually errs by being too deep or too shallow for the matter in hand; and many a schoolboy is a better reasoner than he. I knew one about eight years of age, whose success at guessing in the game of "even and odd" attracted universal admiration. This game is simple, and is played with marbles. One player holds in his hand a number of these toys, and demands of another whether that number is even or odd. If the guess is right, the guesser wins one; if wrong, he loses one. The boy to whom I allude won all the marbles of the school. Of course he had some principle of guessing; and this lay in mere observation and admeasurement of the astuteness of his opponents. For example, an arrant simpleton is his opponent, and, holding up his closed hand, asks, "are they even or odd?" Our schoolboy replies "odd," and loses; but upon the second trial he wins, for he then says to himself, "the simpleton had them even upon the first trial, and his amount of cunning is just sufficient to make him have them odd upon the second; I will therefore guess odd;" he guesses odd, and wins. Now, with a simpleton a degree above the first, he would have reasoned thus: "This fellow finds that in the first instance I guessed odd, and, in the second, he will propose to himself, upon the first impulse, a simple variation

from even to odd, as did the first simpleton; but then a second thought will suggest that this is too simple a variation, and finally, he will decide upon putting it even as before; I will therefore guess even;" he guesses even, and wins. Now this mode of reasoning in the school-boy, whom his fellows termed "lucky," what, in its last analysis, is it?

'It is merely,' I said, 'an identification of the reasoner's intellect with that of his opponent.'

'It is,' said Dupin; 'and, upon inquiring of the boy by what means he effected the *thorough* identification in which his success consisted, I received answer as follows:—"When I wish to find out how wise, or how stupid, or how good, or how wicked, is any one, or what are his thoughts at the moment, I fashion the expression of my face, as accurately as possible, in accordance with the expression of his, and then wait to see what thoughts or sentiments arise in my mind or heart, as if to match or correspond with the expression." This response of the schoolboy lies at the bottom of all the spurious profundity which has been attributed to Rochefoucault, to La Bougive, to Machiavelli, and to Campanella.'

'And the identification,' I said, 'of the reasoner's intellect with that of his opponent depends, if I understand you aright, upon the accuracy with which the opponent's intellect is admeasured?'

'For its practical value it depends upon this,' replied Dupin; 'and the prefect and his cohort fail so frequently, first, by default of this identification, and, secondly, by ill-admeasurement, or rather through non-admeasurement, of the intellect with which they are engaged. They consider only their *own* ideas of ingenuity; and, in searching for any thing hidden, advert only to the modes in which they would have hidden it. They are right in this much—that their own ingenuity is a faithful representative of that of the *mass*; but when the cunning of the individual felon is diverse in character from their own, the felon foils them of course. This always happens when it is above their own, and very usually when it is below. They have no variation of principle in their investigations: at best, when urged by some unusual emergency—by some extraordinary reward—they extend or exaggerate their old modes of *practice*, without touching their principles. What, for example, in this case of D——, has been done to vary the principle of action? What is all this boring, and probing, and sounding, and scrutinising with the microscope, and dividing the surface of the building into registered square inches; what is it all but an exaggeration of the *application* of the one principle, or set of principles of search, which are based upon the one set of notions regarding human ingenuity, to which the prefect, in the long routine of his duty, has been accustomed? Do you not see he has taken it for granted that *all* men proceed to conceal a letter—not exactly in a gimlet-hole bored in a chair-leg—but at least in *some* out-of-the-way hole or corner suggested by the same tenor of thought which would urge a man to secrete a letter in a gimlet-hole bored in a chair-leg? And do you not see, also, that such *recherchés* nooks for concealment are adapted only for ordinary occasions, and would be adopted only by ordinary intellects; for, in all cases of concealment, a disposal of the article concealed—a disposal of it in this *recherché* manner—is, in the very first instance, presumed and presumable; and thus its discovery depends not at all upon the acumen, but altogether upon the mere care, patience, and determination of the seekers; and where the case is of importance, or, what amounts to the same thing in the police eyes, when the reward is of magnitude, the qualities in question have *never* been known to fail. You will now understand what I meant in suggesting that, had the parloined letter been hidden anywhere within the limits of the prefect's examination—in other words, had the principle of its concealment been comprehended within the principles of the prefect, its discovery would have been a matter altogether beyond question. This functionary, however, has been thoroughly mystified; and the remote source of his defeat lies in

the supposition that the minister would do what he would have done himself—taken vast care to conceal the letter on account of its being so very precious. I went to work differently. My measures were adapted to the minister's capacity, with reference to the circumstances by which he was surrounded. I knew him as a courtier too, and as a bold *intrigant*. Such a man, I considered, could not fail to be aware of the ordinary police modes of action. He could not have failed to anticipate—and events have proved that he did not fail to anticipate—the waylayings to which he was subjected. He must have foreseen, I reflected, the secret investigations of his premises. His frequent absences from home at night, which were hailed by the prefect as certain aids to his success, I regarded only as *ruses*, to afford opportunity for thorough search to the police, and thus the sooner to impress them with the conviction to which G—, in fact, did finally arrive—the conviction that the letter was not upon the premises. I felt, also, that the whole train of thought, which I was at some pains in detailing to you just now, concerning the invariable principle of police action in searches for articles concealed—I felt that this whole train of thought would necessarily pass through the mind of the minister. It would imperatively lead him to despise all the ordinary *nooks* of concealment. He could not, I reflected, be so weak as not to see that the most intricate and remote recess of his hotel would be as open as his commonest closets to the eyes, to the probes, to the gimlets, and to the microscopes of the prefect. I saw, in fine, that he would be driven, as a matter of course, to *simplicity*, if not deliberately induced to it as a matter of choice. This conjecture was above or beneath the understanding of the prefect. He never once thought it probable or possible that the minister had deposited the letter immediately beneath the nose of the whole world, by way of best preventing any portion of that world from perceiving it.

'But the more I reflected upon the daring, dashing, and discriminating ingenuity of D—; upon the fact that the document must always have been *at hand*, if he intended to use it to good purpose; and upon the decisive evidence, obtained by the prefect, that it was not hidden within the limits of that dignitary's ordinary search, the more satisfied I became that, to conceal this letter, the minister had resorted to the comprehensive and sagacious expedient of not attempting to conceal it at all.

'Full of these ideas, I prepared myself with a pair of green spectacles, and called one fine morning, quite by accident, at the ministerial hotel. I found D— at home, yawning, lounging, and dawdling as usual, and pretending to be in the last extremity of *ennui*. He is, perhaps, the most really energetic human being now alive—but that is only when nobody sees him.

'To be even with him, I complained of my weak eyes, and lamented the necessity of the spectacles, under cover of which I cautiously and thoroughly surveyed the whole apartment, while seemingly intent only upon the conversation of my host.

'I paid especial attention to a large writing-table near which he sat, and upon which lay confusedly some miscellaneous letters and other papers, with one or two musical instruments and a few books. Here, however, after a long and very deliberate scrutiny, I saw nothing to excite particular suspicion.

'At length my eyes, in going the circuit of the room, fell upon a trumpery fligree card-rack of pasteboard, that hung dangling by a dirty blue ribbon from a little brass knob just beneath the middle of the mantelpiece. In this rack, which had three or four compartments, were five or six visiting-cards and a solitary letter. This last was much soiled and crumpled. It was torn nearly in two across the middle—as if a design, in the first instance, to tear it entirely up as worthless, had been altered or stayed in the second. It had a large black seal, bearing the D— cipher very conspicuously, and was addressed, in a diminutive female hand, to

D—, the minister, himself. It was thrust carelessly, and even, as it seemed, contemptuously, into one of the uppermost divisions of the rack.

'No sooner had I glanced at this letter, than I concluded it to be that of which I was in search. To be sure, it was to all appearance radically different from the one of which the prefect had read us so minute a description. Here the seal was large and black, with the D— cipher; there, it was small and red, with the ducal arms of the S— family. Here the address to the minister was diminutive and feminine; there the superscription, to a certain royal personage, was markedly bold and decided; the size alone formed a point of correspondence. But then the *radicalness* of these differences, which was excessive; the dirt, the soiled and torn condition of the paper, so inconsistent with the *true* methodical habits of D—, and so suggestive of a design to delude the beholder into an idea of the worthlessness of the document; these things, together with the hyper-obtrusive situation of this document, full in the view of every visitor, and thus exactly in accordance with the conclusions to which I had previously arrived—these things, I say, were strongly corroborative of suspicion, in one who came with the intention to suspect.

'I protracted my visit as long as possible, and while I maintained a most animated discussion with the minister upon a topic which I knew well had never failed to interest and excite him, I kept my attention really riveted upon the letter. In this examination I committed to memory its external appearance and arrangement in the rack; and also fell at length upon a discovery which set at rest whatever trivial doubt I might have entertained. In scrutinising the edges of the paper, I observed them to be more *chafed* than seemed necessary. They presented the *broken* appearance which is manifested when a stiff paper, having been once folded and pressed with a folder, is refolded in a reverse direction, in the same creases or edges which had formed the original fold. This discovery was sufficient. It was clear to me that the letter had been turned, as a glove, inside out, re-directed, and re-sealed. I bade the minister good morning, and took my departure at once, leaving a gold snuff-box upon the table.

'The next morning I called for the snuff-box, when we resumed quite eagerly the conversation of the preceding day. While thus engaged, however, a loud report, as if of a pistol, was heard immediately beneath the windows of the hotel, and was succeeded by a series of fearful screams, and the shoutings of a terrified mob. D— rushed to a casement, threw it open, and looked out. In the meantime I stepped to the card-rack, took the letter, put it in my pocket, and replaced it by a *fac-simile*, which I had carefully prepared at my lodgings—imitating the D— cipher very readily by means of a seal formed of bread.

'The disturbance in the street had been occasioned by the frantic behaviour of a man with a musket. He had fired it among a crowd of women and children. It proved, however, to have been without ball, and the fellow was suffered to go his way as a lunatic or a drunkard. When he had gone, D— came from the window, whither I had followed him immediately upon securing the object in view. Soon afterwards, I bade him farewell. The pretended lunatic was a man in my own pay.'

'But what purpose had you,' I asked, 'in replacing the letter by a *fac-simile*? Would it not have been better, at the first visit, to have seized it openly, and departed?'

'D—, replied Dupin, 'is a desperate man, and a man of nerve. His hotel, too, is not without attendants devoted to his interests. Had I made the wild attempt you suggest, I should never have left the ministerial presence alive. The good people of Paris would have heard of me no more. But I had an object apart from these considerations. You know my political prepossessions. In this matter I act as a partisan of the lady concerned. For eighteen months, the minister has had

her in his power. She has now him in hers—since, being unaware that the letter is not in his possession, he will proceed with his exactions as if it were. Thus he will inevitably commit himself at once to his political destruction. His downfall, too, will not be more precipitate than awkward. It is all very well to talk about the *facilis descensus Avernus*; but in all kinds of climbing, as Catalani said of singing, it is far more easy to get up than to come down. In the present instance I have no sympathy—at least no pity—for him who descends. He is that *monstrum horrendum*, an unprincipled man of genius. I confess, however, that I should like very well to know the precise character of his thoughts, when, being defied by her whom the prefect terms “a certain personage,” he is reduced to opening the letter which I left for him in the card-rack.*

‘How? did you put anything particular in it?’

‘Why, it did not seem altogether right to leave the interior blank—that would have been insulting. To be sure, D—, at Vienna once, did me an evil turn, which I told him, quite good-humouredly, that I should remember. So, as I knew he would feel some curiosity in regard to the identity of the person who had outwitted him, I thought it a pity not to give him a clue. He is well acquainted with my manuscript, and I just copied into the middle of the blank sheet the words—

“—Un dessein si funeste,
S’il n’est digne d’Atrée, est digne de Thyeste.”

They are to be found in Crébillon’s “Atrée.”

LIEBIG'S FAMILIAR LETTERS ON CHEMISTRY.

THE English public has again been favoured with a series of Familiar Letters on Chemistry by Dr Justus Liebig—at present by far the most popular cultivator of the science in Europe. His former series* was written for the especial purpose of exciting the attention of governments and an enlightened public to the necessity of establishing schools of chemistry, and of promoting by every means the study of a science so intimately connected with the arts, pursuits, and social wellbeing of modern civilised nations: the present publication† presents a general view of the study, its objects, extent, and applications, in order that the well-informed man, whether chemist or not, may know something of the means and methods by which we have obtained those acquisitions in the sciences, and those abundant resources in the arts, which enable us to supply the necessities of our social existence. And herein consists the chief value of these Letters. They contain nothing that may not be found in the ordinary elementary treatises; they teach no principles which could not be even more explicitly laid down in a student's text-book; but then they are the familiar condescensions of a great mind, which make an impression all the deeper, and excite a reverence all the more exalted, because we feel the greatness of the source whence they proceed. We are placed, as it were, in conversation with the author, catch the spirit of his intention, and respect the simplest facts propounded, which, if coming from a less exalted source, would be apt to be overlooked or disregarded.

The plan of the Letters is as simple and intelligible as their style. The author sets out with a general consideration of chemistry, and of the rank to which it is entitled among the other sciences; treats shortly of chemical affinity and chemical equivalents, illustrating the symbols and formulae by which these affinities are expressed; explains the atomic theory; considers the relation of heat, light, electricity, and gravity to chemical force, and shows wherein these forces differ from

what has been called the vital principle; and, lastly, discusses the transformations—fermentation, putrefaction, and decay—which take place in organic bodies when removed from the influence of vitality. We propose to glean from these subjects—otherwise unsuited to the pages of a miscellaneous journal—some of the more interesting facts and discoveries, which, while they serve to establish the almost universal power of chemistry, may awaken in the mind of the casual reader a desire to know something of its details and modes of procedure.

At present, by far the most popular department of the science is organic chemistry—the investigation of those laws by which the living organism can fabricate new compounds from simple inorganic elements. We say *elements*, for no single element is capable of serving for the nutrition and development of any part of an animal or vegetable organism. All those substances which take part in the processes of life are inferior groups of simple atoms, which, under the vital principle, combine into atoms of a higher order. A plant cannot resolve carbonic acid into other elements than carbon and oxygen: it may use the carbon as a component of its fibre, its resin, or its starch, but it cannot transform carbon into one or other of these, any more than can be done by the chemist. It must have the proper number of elements to operate upon, before it can arrive at perfection. Thus, the seed of a plant externally acted upon by heat, moisture, &c. begins to germinate; it strikes its roots into the ground, and expands its leaves in the atmosphere—these organs absorbing from the soil and air certain inorganic elements, which are transformed by the living organism into vegetable tissues, gums, resins, oils, &c. substances possessed of properties totally different from the original elements on which the plant fed. So, likewise, with animals; the food upon which they subsist is transformed by the vital principle into new and more complex compounds—as fibrin, blood, bile, fat, and the like. All these substances are peculiarly under the power of the chemist; he can resolve them into their primitive elements, transform and transpose them in a thousand ways; determine whence they were derived, and predict the state to which they shall return. The chemist, however, cannot construct vegetable or animal compounds from the simple elements: this requires the aid of a higher chemistry—the chemistry of life, whose mode of action he may unfold, but never successfully imitate. And even if it were that he could form blood, and bile, and fat—nay, that he could fashion a leaf, an eye, or an ear—yet he could never make that leaf develop itself and give birth to others, that eye to see, or that ear to hear. A clear comprehension of the metamorphoses which aliments undergo in the living organism, and of the action of remedies upon that organism, is all that the organic chemist aims at; and an immense step will be gained when he has reached the knowledge of these transformations, and of the causes by which they are produced.

After the extinction of the vital principle, all organic compounds begin to change their forms—in other words, to ferment, putrefy, and decay. The vital principle is a force which, so long as it exists, holds them together; and even when this is extinct, unless acted upon by external forces, these bodies would remain in the same state as at that instant when vitality was arrested. If we can prevent them from being acted upon externally, they may be preserved indefinitely—if not, decay proceeds; and it is from a thorough knowledge of the laws regulating the processes of fermentation and decay, that so much practical benefit has accrued to baking, brewing, wine-making, bleaching, meat-preserving, and other economical processes. The ultimate results of fermentation and decay are to reconvert the elements of organic bodies into that state in which they exist before they participate in the processes of life. Complex organic atoms of the highest order are, by fermentation, putrefaction, and decay, reduced into combinations of a lower

* Noticed in Numbers 630 and 631 of our former series.

† Familiar Letters on Chemistry. Second Series. By Dr Justus Liebig, Professor of Chemistry in the University of Giessen. London: Taylor and Walton. 1844.

order, into that state of combination of elements from which they originally sprang. 'It is only recently,' says Professor Liebig, 'that we have arrived at a satisfactory insight into these processes, and at a minute knowledge of the causes producing and sustaining these peculiar processes of decomposition, differing, as they do, both in their forms and manifestations, from ordinary chemical decomposition. It has been decidedly proved that no vegetable or animal substance passes by itself into a state of fermentation or putrefaction, but that, under all circumstances, heat, and a chemical action arising from the presence and contact of hydrogen or oxygen, is essential to the origin of these processes.'

'The juice of the grape, while it is protected by the external skin from contact with atmospheric air, scarcely undergoes any perceptible alteration. A grape, by gradual exsiccation, becomes converted into a raisin. The slightest perforation through its external covering, as with the point of a needle, for instance, is sufficient to alter all the properties of the juice. Protected from the access of the air, withdrawn from the influence of the atmospheric oxygen, and the effect this exerts upon one of its constituents, the juice (termed *must*) may be preserved for an indefinite period: easily transmutable as its constituents are, no alteration takes place, because no disturbing cause can reach them. But when exposed to the air at a suitable temperature, the grape-juice becomes agitated, a lively evolution of gas takes place, all the sugar it contained disappears, and, when the fermentation is complete, a clear fluid is produced, which has deposited a yellowish mud-like substance as a sediment; this is yeast. The liquid now contains a certain amount of alcohol, which, together with the carbonic acid expelled as gas, corresponds exactly to the amount of sugar it originally contained. The sediment or yeast separated from the clear fluid, and added to an aqueous solution of pure sugar, induces the same phenomena, terminating ultimately in the total disappearance of the sugar, its decomposition and resolution into alcohol and carbonic acid. The yeast which has caused the decomposition of the sugar disappears with it: whilst decomposing the sugar, it undergoes itself decomposition, although more slowly; and it thus by degrees loses completely the power of causing fermentation in another solution of sugar.'

'Animal fluids comport themselves in a precisely similar manner. Milk, whilst in the udder of the cow, urine whilst in the bladder, undergo, in a healthy state, no alteration of their properties. But, in contact with air, milk coagulates without any evolution of gas; cheese separates in the form of a curdy mass, the fluid part becomes acid, and the sugar of milk contained in it disappears with the increasing acidification.

The fermentation of vegetable juices, and the acidification and coagulation of milk, both belong to one and the same class of phenomena; the only difference between them consists in the form or state of the new products into which the constituents of the fluids arrange themselves. One of the new combinations produced in the grape-juice by fermentation is gaseous—namely, carbonic acid (hence the effervescing and frothing of the fluid); whilst, on the other hand, the products of the changes undergone by milk remain in solution in the fluid. The form and nature of the substances which are the result of fermentation being only accidental, we designate by the same term all processes of decomposition occurring in a similar manner, as in the juice of the grape, or in milk, no matter whether evolution of gas accompanies them or not.

'In popular language, processes of putrefaction are distinguished from processes of fermentation; but the distinction does not admit of being scientifically established, since the difference between the two processes consists only in the different manner in which they affect our sense of smell. Putrefaction, according to this distinction, is the process of fermentation in organic substances containing nitrogen and sulphur, which give rise to the formation of products of a disagreeable odour.'

Decomposition, once excited, continues to proceed, even though the original exciting cause be removed. 'If fermentation,' continues Liebig, 'has once been induced in a vegetable juice, in milk, in urine, in flesh, &c. the oxygen which formed the immediate cause of the phenomena of this process of decomposition may be altogether excluded, and yet the process will not be arrested. Fermentation, once begun, proceeds incessantly and irresistibly without the further co-operation of the atmospheric oxygen. The first particle, the atoms of which the chemical action of the oxygen set in motion, being in contact with other particles similar to it in composition, the motion imparted to its atoms acts as an impulse upon the atoms of the contiguous particle, and it now depends upon the amount of attractive force, acting between the atoms of the particles at rest, whether the motion imparted to those of the first particle will be propagated or not. If the motion is more powerful than the resistance, it will be communicated to a second particle, the atoms of this second particle will be set in motion, and this in the same manner and in the same direction as in the first particle: the motion or transposition of the second particle is communicated to a third, fourth, and, in short, to all the compound atoms in the fluid; and, therefore, the same products are formed as a natural consequence of the same manner of arrangement.'

'If the resistance or force which maintains the elements of the other compound atoms in connexion is more powerful than the cause tending to produce an alteration in their position, or their order of arrangement—that is, a division into new products—the action imparted to the first particle must gradually cease.'

It must be obvious, from what is here stated, that fermentation is a process necessarily dependent upon time, that it cannot accomplish its results in an immeasurably short period, like other chemical processes, and this precisely because the decompositions it effects are brought about by the gradual and successive transmission of an action from particle to particle throughout a mass. Yeast, however, and other matters capable of exciting fermentation—they themselves being only substances in a state of ferment—accomplish the result more certainly and satisfactorily the fresher they are; and this because every day they are kept, so much of the motive force of their atoms is expended. Although fermentation be thus a matter of time, *heat, nevertheless, exercises a decided influence on the process.* For example, whilst milk at common temperature yields lactic acid as the principal product of the decomposition of its sugar, at a high temperature we obtain as the product an alcoholic fluid, which, upon distillation, furnishes a true brandy! 'Thus, alterations in the nature of the products of fermentation ensue with every variation in the process induced by changes of temperature, or the presence of matters accidentally drawn in to participate in the transformations. The same grape-juice, when fermented at various temperatures, yields wine of dissimilar qualities and nature, depending upon the circumstance of the temperature of the air being higher or lower during autumn, according to the depth of the cellar in which the fermentation is conducted, which varies the quality, the odour, and the flavour of the wine. A uniform temperature of the place where the fermentation is conducted, insuring its slow and gradual progress, is the principal condition depending upon our own control for the production of the best kinds of wine. The growers of wine will soon universally give the preference to deep rock cellars or vaults for conducting the process of fermentation: such vaults have been found particularly appropriate for the fabrication of the superior varieties of beer; and the advantages of these vaults mainly depend upon their constantly equal temperature.'

But enough of Fermentation, which represents the first stage, after the vital principle is extinct, of the resolution of complex organic atoms into more simple combinations. The process of Decay completes the circulation of the elements, by transposing the products of fermentation and putrefaction into gaseous com-

pounds. The process of decay has been termed by Liebig 'a process of combustion taking place at the common temperature,' in which the products of the fermentation and putrefaction of plants and animal bodies combine gradually with the oxygen of the atmosphere. 'No organised substance, no part of any plant or animal, after the extinction of the vital principle, is capable of resisting the chemical action of air and moisture; for all that power of resistance which they temporarily possessed as the bearers of life, the media of the vital manifestations, completely ceases with the death of the organism; their elements fall again under the unlimited dominion of the chemical forces.'

'The presence of water and a suitable temperature are indispensable conditions of the oxidising process of decay, just as they are necessary to putrefaction and fermentation. Perfect dryness, or a temperature below the freezing point, suspends all processes of decay and fermentation. The transmission of decomposition from one particle to another presupposes a change of place; it requires that the particles should possess mobility, or the power of free motion, and this is imparted to them by the presence of water. In decay, it is more especially a certain elevated temperature which increases the aptitude of the elements of organic substances to combine with the oxygen of the atmosphere.'

'In the process of bleaching in the open air, or, as it is called, grass-bleaching, we have the process of decay applied to an important purpose in the arts upon a large scale. Linen or cotton textures consist of ordinary woody fibre, more or less coloured by extraneous organic substances, which were either contained in the plant whence the fibre has been derived, or have become mixed with it during the processes of preparation.'

'When linen or cotton fabrics are moistened with water, and exposed to the light of the sun, a slow process of combustion or decay immediately begins upon the whole surface; the oxygen of the atmosphere in immediate contact with the linen or cotton is incessantly converted into carbonic acid. The weight of the fabric diminishes every second, precisely because it is in a state of combustion; all the colouring matters gradually disappear, and with them a considerable amount of woody fibre, their elements being converted into oxygen compounds. If this action of air and light upon the linen or cotton continues for a considerable time, these substances lose their cohesion, and become converted into a matter similar to that used in the manufacture of paper; and this matter still continues to decay as long as the essential condition of this change—that is, the absorption of oxygen—proceeds.'

Substances undergoing decay increase the attraction of all other organic substances in contact with them for oxygen. It is upon this power, and especially upon the affinity of alcohol for oxygen, that a speedy process for 'reifying alcohol is based, which is termed the 'quick vinegar process.' 'The transformation of fermented liquors into vinegar formerly required weeks, and even months, to accomplish, in consequence of the imperfect access of the air: we can now convert alcohol into vinegar in less than twenty-four hours; and this is effected mainly by making brandy diluted with water, or any other weak spirituous liquor, trickle slowly through casks filled with wood-shavings, and at the same time causing a slight stream of air to circulate through these shavings. This method exposes to the air a surface of alcohol capable of absorbing oxygen by many thousand times more extensive than the old method; and consequently the time which alcohol, under ordinary circumstances, requires for its acidification, is abridged in the same proportion. At the commencement of this process, it is usual to add to the dilute spirit a small quantity of some substance containing matter capable of undergoing the process of decay, such as beer-wort, honey, vinegar, &c.; but after the lapse of a very short time, the surface of the wood-shavings passes into a state of oxidation, and from that moment effects the transformation of the spirit into

vinegar, without the further co-operation of extraneous decaying matter.'

Omnipotent as is this principle of decay, it is still in the power of man to arrest it; and this he does from a knowledge of the fact, that the property of organic substances, to pass into a state of fermentation and decay, by coming in contact with the atmosphere, is annihilated in all cases, without exception, by heating to the boiling point. 'Fresh animal milk, as is well known, coagulates, after being kept for two or three days, into a gelatinous mass. If fresh milk be heated daily to the boiling point, it may be preserved for an indefinite period. The state of decomposition into which the dissolved caseine passes in contact with air, becomes perfectly arrested; and it requires a more protracted action of the atmosphere to excite it again. Grape-juice, so readily mutable, and every fluid susceptible of fermentation, is affected in the same manner: when heated to the boiling point, all fermentation in them ceases. Beer-wort, after boiling, requires the addition of yeast—that is, an extraneous substance already itself in a state of decomposition—in order to ferment in the shortest possible time. It is obvious that if that particular state into which an organic substance is brought by contact with the atmosphere—although this contact may have been but for an instant—be destroyed by a high temperature, and oxygen (the only cause of its reappearance), from the time of its boiling, be excluded, these substances must, for an unlimited period, retain all the properties they possessed at the moment of boiling. Matter *per se* has no inherent power of mobility; without the influence of some external force upon the atoms, none of them change their place, none alter their properties.'

'If a flask be filled with grape-juice, and made airtight, and then kept for a few hours in boiling water, or until the contained grape-juice has become throughout heated to the boiling point, the minute amount of oxygen contained in the air, which entered the flask with the grape-juice, becomes absorbed during the operation by the constituents of the juice, and thus the cause of further perturbation is removed. The wine does not now ferment, but remains perfectly sweet until the flask is again opened, and its contents brought into contact with the air. From this moment the same alteration begins to manifest itself which fresh juice undergoes: after the lapse of a few hours, the contents of the flask are in full fermentation; and this state may be again interrupted and suspended, as at first, by repeating the boiling.'

'The knowledge of these properties, which are equally possessed by all other organic substances without exception, has given rise to the most beautiful practical applications of them. Whilst in former times, during long voyages, mariners were confined to salt and smoked meats, which in the long-run always proved injurious to health, and thousands of human beings lost their lives for the want of fresh aliments, which were even more essential in sickness, these dangers and discomforts become more and more rare at the present day. This is certainly one of the most important contributions to the practical benefit of mankind ever made by science, and for this we are indebted to Gay-Lussac.'

'At Leith, in the neighbourhood of Edinburgh, at Aberdeen, at Bourdeaux, Marseilles, and in many parts of Germany, establishments of enormous magnitude exist, in which soup, vegetables, animal substances, and viands of every description, are prepared and sent to the greatest distances. The prepared aliments are enclosed in canisters of tinned iron plate, the covers are soldered airtight, and the canisters exposed to the temperature of boiling water. When this degree of heat has penetrated to the centre of the contents, which it requires about three or four hours to accomplish, the aliments have acquired a stability which, one may almost say, is eternal. When the canister is opened after the lapse of several years, the contents appear just as if they were only recently enclosed. The colour, taste, and smell of the meat are completely unaltered. This valuable method

of preparing food has been adopted by many persons in my neighbourhood and other parts of Germany, and has enabled our housewives to adorn their tables with green vegetables in the midst of winter, and with dishes at all times which otherwise could be obtained only at particular seasons. This method of preserving food will become of the greatest importance in provisioning fortresses, since the loss incurred in selling off old stores, and replacing them by new, especially with respect to meat, ham, &c. is far more considerable than the value of the tin canisters, which, moreover, may be repeatedly employed after being carefully cleansed.

Such are a few gleanings from the most important subject touched upon by Professor Liebig in his second series of Familiar Letters. Mere extracts as they are, they may be sufficient to excite the interest and emulation even of ordinary readers. Every reader, it is true, cannot expect to become a Dalton, a Berzelius, or a Liebig; but there is a certain amount of knowledge which he may obtain, profitably and pleasantly. In the concluding words of our author—'There is *want* only where no firm will exists—where no adequate efforts are exerted; the necessary means and instruments exist abundantly everywhere.'

TEMPERANCE PAPERS.

THE temperance movement, like all other movements, has its press, having already established at least half a dozen periodicals, besides numerous separate publications in behalf of the cause. London, Bristol, Ipswich, Glasgow, appear to be the principal seats of publication on the mainland of Britain, but from none of these towns is there such a mass of temperance literature issued periodically as from the Isle of Man. How this island, which has a reputation for anything but literature, should have become the seat of publication of this, as well as other prints—one just commenced, 'The Odd Fellows' Journal'—may appear somewhat strange: we believe, however, that the privilege which the Manx possess of sending all their papers unstamped through the British posts, is the true cause of the phenomenon. Be this as it may, the 'National Temperance Advocate,' issued from the Douglas press, seems a well managed affair, and, according to its own account, has a circulation of 10,300. Its price, sent by post, is no more than three-halfpence, and this is generally the price of other prints of the same character.

Reports of societies, letters from missionaries employed in the cause, opinions of medical men as to the physiological effects of intoxication, advices to drunkards, and so on, are the staple material of these papers; also a vast number of hits are here and there dealt to the keepers of beer-shops and public-houses, jocosely styled 'drunkeries.' Among the advertisements on the outer pages, we observe that a number refer to temperance coffee-houses and hotels, and temperance provident institutions, which would indicate a wide ramification of the principle. In one of the papers is an earnest appeal in favour of Father Mathew, who has been compelled to declare the necessities of his condition. The fact is told to the world, that this intrepid man has ruined himself in a pecuniary sense by his expenditure in the temperance cause. While everybody was applauding his active apostleship, and complimenting him on what he had done for Ireland, nobody seems to have thought how hard it was for a comparatively poor ecclesiastic to carry on such a remarkable struggle at his own cost.

Meetings had to be held, names to be registered, bills to be posted, papers and pamphlets to be circulated. It was necessary to furnish cards and medals to the members of the society. Of the latter, some were sold; but thousands, many of them silver, had to be given away. The poor could not buy them—the rich would not. Children, emigrants, and others, were always supplied gratis. But the expenses connected with the administration of the pledges formed but a small part of the whole cost. It was necessary to take measures for giving stability and permanence to the change which had been effected. For this purpose reading-rooms were established in connexion with the various societies, and temperance publications and newspapers distributed amongst them. So long as he possessed any resources, Mr Mathew was always a principal

contributor towards the formation of these institutions. On founding a new society, he commonly presented a sum of money to be employed for such purposes. A love of music sprang up amongst the reformed people of Ireland, which was wisely fostered by the friends of the temperance movement. Bands were formed in connexion with many of the societies; and here again, from a conviction of the importance of such aids to the cause, Mr Mathew was a liberal donor. Travelling expenses, too, notwithstanding the liberality of coach-proprietors, were formidable. Then there were constantly societies in debt and difficulty to be assisted. Mr Mathew would never consent to the abandonment of a reading-room, or the breaking up of a band, through want of means, so long as he was able to prevent it. Lastly, sufferers by the reform were generously relieved. The widow, the orphan, and the aged, whose means of subsistence had been interfered with, were never refused assistance. In this way, by such noble deeds of mercy, Mr Mathew's resources have been exhausted. He is now destitute of means; considerable debts press heavily upon him. He is daily harassed by demands for money, with which he is totally unable to comply. And, above all, he is prevented from labouring freely and with vigour for the cause which is so dear to him, and which so much requires his assistance. We feel that it is quite needless to add much to the foregoing facts. They will touch all hearts. This great and good man has devoted his life and powers to a noble work—he has sacrificed his own property and that of his family for its sake. We trust this appeal will not be in vain.

Glasgow is mentioned as having lately become the focus of agitation in the temperance cause, and our authority states that a society in that city receives nearly 100 new adherents weekly. We are glad to hear this, for Glasgow is one of the most temperate towns in the United Kingdom. The scenes of intoxication on Saturday evenings are among the most distressing which occur in human society.

Temperance societies are stated to be now established in from forty to fifty towns in Holland, with the approval of government. In Rotterdam, it is said, there are five hundred adherents of total abstinence. The merit of such self-denial is augmented by the consideration, that throughout Holland the best gin and brandy are to be had at eightpence a bottle.

Luxurious habits, late rising, and tobacco-smoking, come in for a good share of abuse and jocularities in these uncompromising pages.

'What silly old men our fathers were!

What stupid lives they led!

They rose with the sun, they dined at noon,

And at nine they went to bed.

Their day began by break of morn,

But ours begins at dark;

And they never, in carriages closed, rode out,

To take the air in the Park.'

The Temperance Chronicle, in noticing a work—'Advice to Smokers,' which, of course, nobody will take—gives an extract on the pipe-in-mouth form of indulgence. A gentleman takes a lodging in the house of a working-man, and, somewhat surprised with the neat appearance of things, asks 'how they managed to be so respectable in these depressing times. The man answered, "I have no more wages than my neighbours—the wages are very low, for I am a stocking-maker; but I am industrious. I waste no time—I keep no saint Monday—I do not saunter about the lanes, or stand at my door with a pipe in my mouth—I talk no politics—I mind my own business, and in my leisure hours work in my little garden, grow my own potatoes, and keep a pig or two. We are as comfortable as a working-family need to be, even in these hard times." One part of this relation particularly arrested my attention—"I do not saunter about the lanes, or stand at my door with a pipe in my mouth." I could not help contrasting this working-man's house with many I have visited, where the inhabitant makes use of that *paper-making* weed—tobacco. Whenever I enter a house more filthy, wretched, and miserable than another, I have for years invariably looked about for that emblem of poverty—a tobacco-pipe; and I do not know that I ever failed seeing one in some corner or other.'

With these few scraps, we, for the present, bid good-bye to the temperance press. Ready to give advice to others, it may receive from us an advice in return. We should like to see the temperance papers, without abating a jot in principle, somewhat less fierce and dogmatic, more

courteous and kindly in tone; and while, generally speaking, they improve their paper and typography, they should endeavour to attain a considerably higher literary qualification.

MUSCOVITE HONESTY.

'No inhabitant of old western Europe,' says the author of a book recently published, under the title of 'Revelations of Russia,' 'can form an idea of the extent of the universal corruption of the Russian employés. It is true he cannot cross the portals of that empire without having repeated and annoying proofs of the disgusting venality and rapacity of the inferior class of officials with whom he comes in contact. But it is still impossible for him to conceive, until he sees, the same spirit pervading all those whose exalted station in every other country places them above suspicion.' According to this author, peculation is universal among the Russian officials, from the street watchman to the highest officer in the state. No official can be got to do his duty unless you bribe him. Money is also extorted by the functionaries of the law by very plain threats, that if it is not given, the individual will be put to trouble and annoyance. Justice itself is sold; and the profession of lawyer or pleader is quite at a discount; for the most efficient advocate is a bank-note given to the judge. In the army and navy it is the same. All pilfering, it is a recognised fact, that nine-tenths of the income of every man engaged in any public employment, of every officer in the army or the navy, consist, and must consist, of pilferings. The officer intrusted with the charge of providing the necessaries for a regiment, makes a handsome profit for himself out of his bargains; the officers commanding a distant expedition grow rich by starving the men; and the captain of a Russian man-of-war will sell the very cordage of his vessel when he is at a foreign port, and pocket the proceeds. The clerks in public offices are constantly appropriating small sums; or, if the nature of their duty admits of it, as in the case of the passport office, they extort bribes. The merchant of course is pre-eminently a cheat. The Muscovite shopman, of whom you are purchasing goods at double their proper cost, swears by his patron saint that he is selling the articles at a loss, inwardly promising the saint at the same time a per centage of the proceeds in oil and ornaments for his shrine if he helps him to defraud you. Dishonesty, according to this author, is ingrained into the very constitution of a Muscovite. It has been cynically asserted of the human race in general, that 'every man has his price,' meaning, that there is no human being who might not be tempted to do what was wrong, if only the person tempting him knew what motives acted upon him most powerfully; but in Russia, according to this author, 'every man has his price in money.' An assertion so sweeping about a whole people, one has great difficulty in receiving; and, accordingly, the author of the book before us fortifies his accusation by a number of anecdotes, which have every appearance of being authentic, and also by assigning reasons of a speculative kind which make the assertion probable. And, first, to give a few of the author's anecdotes scattered up and down through the book.

'The Emperor Nicholas,' says he, 'having been made acquainted, whilst grand-duke, with the glaring malversations which took place in the naval arsenals of Cronstadt, some time after his accession, suddenly sent down a commission, who placed the imperial seal upon everything, and prepared to commence on the following day the labour of inquiry. That night the arsenals were destroyed by fire. But even the consuming element could not destroy the long-accumulated evidence of fraud. On clearing the ruins, a number of cannon were discovered, which, on reading the inscription on them, were found to belong to a man-of-war which had been lost a short time before in the Gulf of Finland, and, as it had been reported, with all her guns and stores on board. It was therefore evident that her own officers had taken her out to sea for the purpose of sinking her, having previously left all the valuable part of her armament and provisioning on shore for sale.'

Again, a foreign merchant of immense fortune was summoned, for some trifling affair, to the office of Count Benkendorff, the prefect of police. 'On repairing thither, he was kept standing for six hours, and then dismissed. The next day he was again ordered to attend: the penalty of disregarding such a summons was too dangerous to incur;

he again danced attendance in vain; and thus week after week he was annoyed and taken from his most important business, the time of his most serious engagements being, as it appeared, wilfully and maliciously selected. At last it was hinted to him that if he would leave a very considerable sum (upwards of £8000) at the office as a pledge of his appearance whenever it should be required, he would meet with no farther annoyance. He thought it wisest to comply, and from that moment was never asked for.'

The next anecdote is somewhat different, but still it is illustrative of national dishonesty. 'During the administration of the late police master, a personage of considerable importance discovered, on stepping into his sledge, that he had either lost his pocket-book, containing two thousand roubles, or been robbed of it. He applied to one of the police-officers. The police-major asked for a description of it, and the numbers of the notes. The owner had no recollection of the pocket-book further than that it was a red one, and contained the sum mentioned. An hour after, the police-major returned triumphantly; he had placed the thief in custody, and he restored the pocket-book, with its contents untouched, to the illustrious owner, who was of course all thanks and gratitude. The next day, however, his highness felt something hard in the lining of his fur pelisse, which, on examination, proved to be the original pocket-book, with its notes, which had slipped through a rent in the pocket, and which the policeman had pretended to restore to him; the hopes of his patronage, or the fear of his displeasure, having been considered worth a sacrifice of two thousand roubles.' Whether the person falsely accused of the theft was let off or no, was never known; probably not, says the author.

As an instance of peculation on the small scale, the author relates the following:—A pile of copper had been coined into ten-kopeck pieces. The pieces were locked into a strong room, where they lay on the floor. When the room was visited, it was found that the mountain of ten-kopeck pieces had sunk down in the middle, like the crater of a volcano. The clerks underneath had bored a hole in the flooring, and pulled down the pieces by means of a pole and a wire fixed to it.

It may be asked, are no complaints made, and does not the law wage war with this scandalous and universal corruption? The late Emperor Alexander found himself quite unable to do anything effective towards the suppression of such malpractices. He used to say of his Muscovite subjects, in his easy good-humoured way, 'If they only knew where to warehouse them, they would purloin my line-of-battle ships; and if they could do it without waking me, they would steal my teeth while I slept.' The present emperor, Nicholas, on the other hand, is a decided foe to all these established methods of criminality; and whenever a case of fraud or peculation is represented to him, he punishes it severely. But that even under such an emperor as Nicholas, it is thought necessary occasionally to wink at flagrant instances of malversation, rather than raise that popular clamour which in Russia, more than in any other country, is obnoxious to the government, would appear to be proved by the following strange story, which we also find in the book before us. A poor nobleman had been carrying on a lawsuit for several years. He received an intimation from the secretary of the tribunal, that unless he paid over 10,000 roubles (£1450) to the president, the case would be decided against him. Not having the money, he took the bold step of informing Count Benkendorff, the chief of the police, of the iniquitous offer made to him. In order to make the proof clear, he asked the count to give him the requisite amount of notes, marked so that they might be known again. He undertook that these notes should be found on the person of the president of the court. He got the notes and went away. As is usual in Russia, he invited the president-judge to dine with him. A police-officer was secreted in an adjoining room, who was to come out on a given signal and search the judge. On sitting down to dinner, the notes were given to the judge, who, counting them over, tossed them into his hat. This hardly amounting to proof enough, the host did not give the signal, waiting till the hat should be put on. During dinner some one knocked. It was the judge's nephew come with a message. After delivering it to the judge, he went away. When dinner was over, the judge rose to go, and put on his hat. The host gave the signal, and rushed the police-officer. The judge's hat was taken off, when lo! the notes were not in it. His nephew had taken away the right hat, and left the wrong one. The bribery could not be proved. Our author

thinks that the explanation of the affair is, that the judge received a private hint from Count Benckendorff's office.

How is this universal corruption and venality of the Muscovites to be accounted for? Our author assigns probable reasons for it. One of these is, that there has been nothing in the history of the Muscovite nation to implant in the national character that chivalrous feeling of honour of which most other nations have more or less. But a much more plain and matter-of-fact reason is, that the salaries of all Russian officials are so small, that no official could live without peculating. The salaries have not been changed for more than a century, although all that time the value of money has been changing. Thus, the pay of a general admiral in the Russian navy is only £540 a-year; of an admiral, only £225; of a first-class captain, only £80 or £100; and of a midshipman, only £38. An English blacksmith, employed at the Russian iron-works at Colpenas, receives a larger salary than an admiral; and a gentleman's valet in St Petersburg has a better income than a lieutenant in the navy. To make up for this, however, all the Russian government officials are accounted noblemen; they belong to one or other of the fourteen grades of Russian nobility; and if the English blacksmith at Colpenas would exchange his £300 a-year for £30, with the perquisite of indefinite peculation, he might rank as a Russian nobleman too.

FINE FOR BURYING IN LINEN.

The following paper is a curious memorial of the absurd plans tried in former times for the encouragement of particular manufactures. It relates to an act which was designed to promote the use of woollen in arraying the dead. It is handed to us by a descendant of the parties who paid the fine:—

Discharge be procurator-fiscall. To David Keltie and Agnes Paton, 1710.

I, Robert Duncan, procurator-fiscall of the shireff-court of Kinross, grants me to have received full satisfaction of the soume of one hundred pounds Scottis money from David Keltie of Newbigging, in Tullyboil paroch, and Agnes Paton there, his mother, of the soume of one hundred pound Scottis money, dew to me as discoverer for their cryme in bairing the decessat John Keltie of Newbigging in llining, contrair to the late act of parliament, wherein they were fyned and amerciate upon the twentieth day of Apprill last by past, and hereby exoner and simplicitor discharges the said David Keltie, and the said Agnes Paton, and all concerned, of the foresaid soume, and sentence pronounced thereupon in my favours as discoverer of the said cryme, with all that has followed, or may follow thereupon, relative to the foresaid sentence. In witness wherof, I have subscribed this presents with my hand, att Kinross, the synth day of May, seventeen hundred and ten years, before this witnesses, John Watsone, officer in Kinross, and John Blackwood, officer there, and the said Robert Mories, wreater heriof. (Signed) ROBERT DUNCAN.

John Watson, witness.

John Blackwood, witness.

Robert Mories, witness.

PROGRESS OF ENGLISH AGRICULTURE.

Farmers are finding out that it is necessary for them, with a view to their own interests, to take a very different course from that which was followed by their grandfathers and great-grandfathers. In these days, no man is allowed to stand still. Improvement must go on. And I see throughout the country, in every part of it, gratifying proofs that improvement is going on, as actively in the agricultural as in the manufacturing districts and operations of the country. Even within the last four or five years, I see strides which, small as they may be compared with what might be done, are gigantic when compared with what was done before. I think it is not more than four or five years ago that, at a meeting of the Royal Agricultural Society of England, I first noticed, as a novelty of a singular character, a new manure, known as guano, and recommended to the agriculturists of England. If I am not misinformed, from the port of Liverpool alone there have gone out, within this single year, no less than 150 vessels, chartered expressly for the purpose of importing this then unknown manure for the improvement of the agriculture of the country. Everywhere I see old and useless fences disappearing, fields enlarging, improved modes of cultivation adopted; and I see going on with immense rapidity that which, I must

again and again impress upon you who are connected with the land, is the basis of all improvement—deep and thorough drainage of the land; and not here alone, but throughout all England, I see most remarkably, as indeed any one may do, even though whirled through the country at the railway speed with which we are now carried, what an extent of improvement has been effected in this respect. Every one is struck with the appearance of preparation for future exertions, which are, at the same time, the token of well-deserved success.—Lord Stanley at the Liverpool Agricultural Association.

SORROW AND SONG.

[From 'Poems by James Hedderwick' (Andrew Rutherglen, Glasgow). Mr Hedderwick's poetry evinces a lively fancy, and is marked by great delicacy of feeling. His volume contains several reprints of verses which we had formerly seen in periodical works, and which have become favourites with us. We are glad to see them again in their present beautiful and more permanent form.]

WEEP not over poet's wrong,
Mourn not his mischances—
Sorrow is the source of song,
And of gentle fancies.

Rills o'er rocky beds are borne,
Ere they gush in whiteness;
Pebbles are wave-chafed and worn,
Ere they show their brightness.

Sweetest gleam the morning flowers
When in tears they waken;
Earth enjoys refreshing showers
When the boughs are shaken.

Ceylon's glistening pearls are sought
In its deepest waters;
From the darkest mines are brought
Gems for beauty's daughters.

Through the rent and shivered rock
Limpid water breaketh;
'Tis but when the chords are struck
That their music waketh.

Flowers by heedless footsteps prest,
All their sweets surrender;
Gold must brook the fiery test,
Ere it show its splendour.

When the twilight cold and damp
Gloom and silence bringeth,
Then the glow-worm lights its lamp,
And the bulbul singeth.

Stars come forth when night her shroud
Draws as daylight faineth;
Only on the fearful cloud
God his rainbow painteth.

Weep not, then, o'er poet's wrong,
Mourn not his mischances—
Sorrow is the source of song,
And of gentle fancies.

THE LAST OF THE PURKISES.

It is recorded in the History of England, that the body of King William Rufus, after that monarch had met his death by an arrow discharged from the bow of Sir Walter Tyrrel, whilst engaged in hunting in the New Forest, was picked up by a man named Purkis, who placed the corpse of the king in a cart, and conveyed it to Winchester. It is a remarkable circumstance connected with the Purkises, that for upwards of 750 years they have continued to enjoy uninterrupted possession of the same identical spot, which amounts to about two acres of ground, situated near the village of Minstead, in the New Forest, contiguous to which the king was killed. From the earliest period of their history, it is found that the Purkises were by trade or calling charcoal-burners, which same business they have continued to carry on from father to son up to the present time, and which mode of employment has fortunately afforded them the means of preserving their patrimony entire through a long course of generations. William Purkis, the present possessor of the above humble estate, is now in his eighty-seventh year, and having outlived all his relations, is now the last of the Purkises.—*Newspaper paragraph.*

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